Evaluation of Reintroduction Alternatives (E. 3.1-2, Chapter 11)

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I. Introduction

The Applicant evaluated a number of scenarios for reintroducing anadromous fish to the Snake River Basin. They based their evaluations for each scenario on estimated potential adult returns to Hells Canyon Dam from subbasin smolt production estimates they developed. They assumed that smolt will enter the mainstem Snake River and arrive at the tailrace of the Lower Granite Project either by transportation or by some combination of downstream passage. Therefore, the specific criteria for each evaluation are 1) the estimated number of smolts from the subbasin or mainstem river section to reach the Lower Granite tailrace and 2) the corresponding adult returns.

The Applicant compared the estimates of adult returns with estimates of escapement that would be required to maintain the subbasin smolt production estimates. They present and discuss a range of alternatives that cover the requisite factors and considerations for any reintroduction alternative. For each scenario they relate adult returns to estimates of construction costs for passage facilities presented in chapter 9. The study does not consider the specific actions necessary in each subbasin for reintroduction to succeed. These actions include irrigation screening and construction of bypass or collection facilities in the subbasins. IPC does not consider predation and other mortality factors that would occur within the subbasin.

II. Conclusion

1. "Recovery of ecosystems that is within human control would require enormous societal commitment. Lackey (2001) suggested that there is little tangible evidence that people are willing to make the substantial personal or societal changes necessary to restore large runs of salmon. An example of positive movement toward ecosystem recovery in the Snake River basin is the ongoing process of implementing reductions of total maximum daily loads (TMDL), a process intended to reduce pollutant sources to waters in the basin. Although the intentions of the TMDL process are good, the successful implementation and benefit of such a process have yet to be seen. Even if they are seen, it will likely be many years from now. However, the TMDL process alone, even if successful, will not result in full ecosystem recovery. For example, the TMDL will not significantly reduce high water temperatures upstream of the HCC. Riparian habitat recovery on a large geographic scale is essential for ecosystem recovery. Connectivity of habitats fragmented by low instream flows, water diversions, and tributary and mainstem dams is also critical to ecosystem recovery. Without ecosystem recovery, reintroduction

with the goal of recovering anadromous populations is not feasible." (Page 28, Paragraph 4)

Response:
BLM partially agrees with this statement. However, the Applicant is dismissive of the fact that many agencies, Tribes, and private interests are working to improve water quality and fish habitat in areas above the Hells Canyon Complex. The Applicant has described in detail the many limiting factors that introduced salmon will face. Many of these limiting factors are beyond the Applicant's control. However, the Applicant controls all of the dams that block all of the fall chinook habitat and portions of the spring/summer chinook and summer steelhead habitat above the Hells Canyon Complex. A first step societal change would be for the Applicant to step forward and agree to do all that is necessary to improve their part of this very large Basin-wide problem.

2. "Furthermore, unless average SARs [Smolt to Adult Returns] downstream of the HCC improve very substantially over those of the early 1990s, reintroduction is quite infeasible. The same factors that limit anadromous fish downstream would also limit success of reintroduction upstream of the HCC." (Page 30, Paragraph 3)

Response:
The BLM believes that this point needs to be addressed by the NMFS. There are significant efforts to continually improve smolt to adult returns at all of the dams below HCC. There has been a significant improvement in the SARs below HCC during the last several decades.

3. "Even with substantial increases in SARs, most of the reintroduction scenarios that we examined would not permit self-sustaining populations of anadromous fish to develop in many subbasins." (Page 30, Paragraph 3)

Response:
The BLM agrees that this statement is partially true. It should be acknowledged that many of the basins are currently inaccessible or have poor habitat quality that limits smolt production. IPC does not take into account the possibility that these basins can be improved to a level that will accommodate self-sustaining populations of anadromous fish.

4. "Very significant steps toward ecosystem recovery need to occur upstream of the HCC. Such ecosystem recovery should be an immediate priority even before reintroduction. Along with that priority must come the realization that we (society) cannot turn back the clock—that human population growth will continue and we will not be able to recover all that was. Lackey (2001) asked the following question of fishery scientists:

> *Should we perpetuate the delusion that the Pacific Northwest will (or could, absent pervasive life-style changes) support wild salmon in significant numbers given the current trajectory of the region's human population growth coupled*

with most individuals' unwillingness to reduce substantially their consumption of resources and standard of living?

Managers must have realistic expectations for what can be accomplished in reintroducing anadromous fish. Limited resources could be better directed, at least in the short term." (Page 30, Paragraphs 3-5)

Response:

The BLM does not agree. The promotion of this statement is in the interest of the Applicant. It may be decided at the end of negotiations to not reintroduce anadromous fish above the Hells Canyon Complex. However, to theorize that human population growth precludes the recovery and reintroduction of salmon is premature and outside the scope of the license.

5. *"We suggest that primary action should be directed at protecting and maintaining the remaining strongholds. Secondarily, we would aim at recovering and enhancing the areas that have the greatest potential for at least partial recovery. Many of these necessary actions go beyond the scope of Idaho Power and relicensing of the HCC; they would involve a large group of societal interests and commitment. These actions should include efforts to increase escapements in habitats for all anadromous fish downstream of the HCC. For example, fall chinook habitat in the Snake River downstream of the HCC is currently significantly underseeded (Groves 2001, Connor et al. 2001), as are populations of other anadromous fish." (Page 30, Paragraph 7)*

Response:

The BLM does not agree with this statement. The statement indicates that all is not being done to protect, mitigate, and enhance anadromous fish below the Hells Canyon Complex. The Applicant is outside the scope of the subject of the Hells Canyon Complex draft license application. The tribes and fisheries and land management agencies presently have many programs in place to improve anadromous fish stocks below HCC and protect resident fish strongholds both below and above the HCC.

6. *"The viability of native resident fish populations upstream of the HCC depends on ecosystem recovery. Examples most immediately associated with the HCC are white sturgeon in the reach below Swan Falls Dam (Lepla et al. 2001) and bull trout in Indian and Pine creeks (Chandler et al. 2001, Pratt 2001). Many other redband habitats upstream of the HCC can be markedly improved, especially by eliminating livestock access to riparian zones." (Page 31, Paragraph 2).*

Response:

The BLM agrees with this statement. The BLM is exercising all of its authority to recover bull trout on national resource lands under the guidance and mandates of the Endangered Species Act. This includes managing livestock to protect riparian habitat.

7. *"Anadromous fish [that provide marine-derived nutrients] may be a part of the ecosystem recovery necessary for resident fish. However, in the short-term, these white sturgeon and bull trout populations face limiting factors more dire than the loss of*

nutrients caused by lack of anadromous fish. In the short-term, the lost nutrients could be replaced by programs such as carcass out-planting." (Page 31, Paragraph 2)

Response:
The BLM agrees with the statement that marine-derived nutrients depletion can be alleviated by carcass out-planting. However, the BLM disagrees with the implication that nothing is being done to address the problems of white sturgeon and bull trout. Limiting factors impacting white sturgeon are being addressed by the states through the TMDL process. Bull trout habitat is being improved through riparian protection programs. This statement implies habitat improvement is not being addressed. One of the most serious limiting factors that affect both species is lack of passage over all the Applicant's dams in the Snake River necessary to accomplish genetic interchange between sub-populations.

8. "Our assumptions with respect to tributary and mainstem habitats (Chapters 4 [Chandler and Chapman 2001] and 5 [Chandler et al. 2001]), production potential (Chapters 7 [Chapman and Chandler 2001a] and 8 [Chapman and Chandler 2001b]), survival through reservoirs and free-flowing sections (this chapter), and incubation survival in the mainstem Snake River (Chapter 5 [Chandler et al. 2001]) all impinge on feasibility of reintroduction of anadromous salmonids. Future study should address these uncertainties in conjunction with implementation of measures to recover native salmonids and their habitat in basins such as Pine and Indian creeks." (Page 31, Paragraph 3)

Response:
The BLM should consult with NMFS, FWS, ODFW and IDFG before it agrees with all of the assumptions presented by the Applicant in the anadromous fish reintroduction study. The BLM acknowledges that the factors listed all impinge on feasibility of reintroduction of anadromous salmonids. It also agrees that additional studies are needed to address the uncertainties of measures to recover native salmonids and their habitat.

9. "In the short-term, we have much to learn regarding factors that will affect successful introduction." (Page 31, Paragraph 3)

Response:
The BLM agrees with this statement.

10. "Studies of mainstem production areas could continue regarding intragravel conditions in conjunction with measures implemented in the ongoing TMDL process to improve water quality in the mainstem Snake River." (Page 31, Paragraph 3)

Response:
The BLM agrees with this statement.

III. Study Adequacy

The study is fairly accurate but strongly biased toward the assumptions that most of the habitat is unsuitable for anadromous fish reintroduction at this time. The entire document

E.3.1-2 (11 chapters) carefully builds to the final conclusion that the habitat is unsuitable and the smolt to adult return rates would not be high enough to warrant reintroduction. Their data as presented shows this to be the case.

IV. BLM Conclusions and Recommendations

Conclusions

The Applicant's study conclusions are basically true. It must be acknowledged that the habitat generally is not in good condition. The withdrawal of water from nearly every subbasin for irrigation has severely impacted the production potential of former anadromous fish streams. There are many other limiting factors that must be addressed before anadromous fish could successfully access and use many of the major tributaries. The mainstem Snake River also has numerous limiting factors that need to be corrected. However, the study has focused on all of the negative elements that have been reported in the literature and is creating a worst-case scenario.

Recommendations

The BLM believes that anadromous fish reintroduction will only be successful if every entity in the Snake River Basin above HCC is involved in the goal of creating suitable habitat and passable conditions for anadromous fish. Many Tribal, state, federal and private entities are working to improve water quality and stream habitat above the Hells Canyon Complex. Currently, there is an attitude displayed in this document that everyone else needs to fix their part of the problem before there is any reason for the Applicant to consider correcting fish passage problems caused by the Hells Canyon Complex.

If it is determined collectively by these groups and agencies that their efforts to improve habitat for anadromous fish will be insufficient, then they may agree with the Applicant that it will be necessary to continue with current hatchery operations or some modified version of the Lower Snake River Compensation Plan.